ENGLAND.

Discovery by the yellow-fever expedition of a bacillus in cases of yellow fever.

LIVERPOOL, ENGLAND, *February 23, 1901.*

SIR: I have the honor to transmit under same cover copy of an article that appears to-day in the British Medical Association Journal on the cause of yellow fever. I thought it might be of interest for the PUBLIC HEALTH REPORTS.

Respectfully,

JOHN F. ANDERSON,
Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

[Inclosure.]

Liverpool school of tropical medicine—Yellow-fever expedition.

[Abstract of interim report, by the late Walter Myers, M. B., B. C. Camb.]

1. Sufficient research reveals the presence of a fine, small bacillus in the organs of all fatal cases of yellow-fever. We have found it in each of the 14 cadavers examined for the purpose. In diameter, the bacillus somewhat recalls that of the influenza bacillus; seen in the tissues, it is about 4 micromillimeters in length.

2. This bacillus has been seen in kidney, in spleen, in mesenteric portal and axillary lymphatic glands, etc., taken from yellow fever cadavers directly after death. In the contents of the lower intestine apparently the same bacillus is found often in extraordinary preponderance over other microorganisms. Preparations of the pieces of mucus, which are usually, if not always, present in yellow-fever stools, at times may almost present the appearance of pure cultures.

3. Preparations of the organs usually fail to show the presence of any other bacteria, whose absence is confirmed by the usual sterility of cultivation experiments.

4. It is probable that this same bacillus has been met with but not recognized by 3 other observers. Dr. Sternberg has mentioned it, and he has also recorded the finding of similar organisms in material derived from Drs. Domingos Freire and Carmona y Valle, but he did not recognize its presence frequently, probably on account of the employment of insufficiently stringent staining technique.

5. It is probable that recognition has not been accorded to this bacillus by reason of the difficulty with which it takes up stains (especially methylene blue), and by reason of the difficulty of establishing growth on artificial media.

6. The most successful staining agent is carbolic fuchsin (Ziehl), diluted with 5 per cent phenol solution (to prevent accidental contamination during the long staining period) immersion for several hours, followed by differentiation in weak acetic acid. Two hours' staining may fail to reveal the baccilli, which appear after twelve to eighteen hours. The bacilli in stools are often of greater length than those in the tissues, and they stain rather more easily; naturally the same is true of cultures.

7. Since the bacilli are small and comparatively few in numbers they are difficult to find. To facilitate matters at our last necropsies (14th and 15th) a method of sedimentation has been adopted. A considerable quantity of organ juice is emulsified with antiseptic solutions, minute precautions against contamination and for control being taken; the emulsion is shaken from time to time and allowed to settle. The method is successful and may form a ready means of preserving bacteria containing material for future study. The best fluid for the purpose has yet to be worked out; hitherto normal saline with about one-fifth per cent sublimate has been employed.

8. Pure growths of this bacillus are not obtained in ordinary ærobic and anærobic culture tubes.

9. Some pure cultures have been obtained by placing whole mesenteric glands (cut out by means of the thermo-cautery), into broth under strict hydrogen atmosphere. Investigations into the necessary constitution of culture media for successful cultivation are in progress.

10. Much search was made for parasites of the nature of protozoa. We conclude that yellow fever is not due to this class of parasite. Our examinations were made on very fresh organ juices, blood, etc., taken at various stages of the disease, with and without centrifugalization, and on specimens fixed and stained in appropriate ways. We may add that we sometimes have examined the organs in a fresh state under the microscope within half an hour after death.

11. The endeavor to prove a man-to-man transference of yellow-fever by means of a particular kind of gnat by the recent American Commission is hardly intelligible for baccillary disease. Moreover, it does not seem to be borne out by their experiments, nor does it appear to satisfy certain endemiological conditions. It is proposed to deal more fully with endemiology and epidemiology of the disease on a later occasion. We think that the evidence in favor of the etiologocal importance of the fine, small bacillus is stronger than any that has yet been adduced for any other pretended yellow-fever germ. At the same time there is a much further work to be done ere its final establishment can be claimed. The acquisition of a new intestinal bacterium would explain the immunity of the acclimatized.

Report from London—Plague in Cape Town, Africa.

LONDON, ENGLAND, *February 23, 1901*

SIR: I have the honor to state that the health of England and Wales remains good. For the week ended February 16, there was no death from any quarantinable disease, and only 1 case of smallpox was under treatment in London.

A considerable number of cases of smallpox continue to occur in Glasgow and the neighboring towns. There were yesterday 355 cases in hospital. Since the beginning of the outbreak 130 deaths have occurred. Vaccination and revaccination are being rigorously urged, and it is hoped that the height of the epidemic is passed.

No cases of plague in England have come to my notice. The following statement regarding plague in Cape Town has been issued: Bubonic plague report for the week ended February 16, notifies total of 20 cases; 1 European, 19 colored; 3 deaths; 104 contacts, all colored. Two further cases have since been reported, 1 colored and 1 white.

Respectfully, A. R. THOMAS,
Passed Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

FRANCE.

Plague at Beirut in 1900—Bubonic form weakly contagious.

PARIS, FRANCE, *February 19, 1901.*

SIR: I have the honor to transmit herewith translation of an article on the epidemic of plague at Beirut in 1900, by Mr. H. de Brun. This study was presented to the Academy of Medicine by Dr. Proust.

Respectfully, S. B. GRUBBS,
Assistant Surgeon, U. S. M. H. S.

The SURGEON-GENERAL,
U. S. Marine-Hospital Service.

[Inclosure.]

A study of the epidemic of plague at Beirut, 1900, by Mr. H. de Brun.

The most striking fact shown by the observation of the patients is the real value of Yersin's serum. In the case of 3 patients a single injection of 40 c. c. was enough to cause the fever to disappear, to check the progress of the disease, and relieve almost immediately all alarming symptoms. All this in spite of the fact that these patients were only inoculated on the fourth, sixth, and eleventh days of the disease.

The fourth patient, it is true, showed more resistance; he was more seriously infected, and 6 injections were necessary in order to overcome the disease. It is only just to say that the first injection was made here on the eighth day of the disease, and that each one was followed by a marked improvement.

The directions furnished by the Pasteur Institute give 10 to 20 c. c., as the dose to be injected, but it seems that this can be greatly increased with advantage, since we have